

Title (en)

Compounds containing 2,2'-bis-(diphenylphosphino)-1,1'-binaphthyl and catalytic metal complexes thereof.

Title (de)

2,2'-Bis-(diphenylphosphino)-1,1'-binaphthyl enthaltende Verbindungen und katalytische Komplexe davon.

Title (fr)

Composés contenant du 2,2'-bis-(diphénylphosphino)-1,1'-binaphtyle et complexes catalytiques.

Publication

EP 0444930 A1 19910904 (EN)

Application

EP 91301644 A 19910228

Priority

JP 5026290 A 19900301

Abstract (en)

A phosphine compound 2,2 min -bis[di-(3,5-dialkylphenyl) phosphino]-1,1 min -binaphthyl is represented by the formula <CHEM> wherein R represents a C1-4 alkyl group. Synthesis is by reacting 2,2 min -dibromo-1,1 min -binaphthyl (see JP-A-55-61937) with Mg and reacting the resultant Grignard reagent with a bis(3,5-dialkylphenyl) phosphonyl chloride; the resulting racemic phosphoryl binaphthyl is dissolved and crystals thereof recrystallised to purify them; (+)- and (-)- forms of the free phosphine oxide are obtained and reduced with trichlorosilane to provide the (+)- or (-)- isomers of the novel compound; or the racemate can be produced. The compound can be reacted with a compound of a transition element such as rhodium, palladium or ruthenium as a ligand to make a complex thereof which is useful as a catalyst in an asymmetric synthesis reaction, e.g. asymmetric hydrogenation of a beta -keto ester, to give a product of high optical purity in high yield.

IPC 1-7

B01J 31/24; C07F 9/50

IPC 8 full level

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CPC (source: EP US)

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Citation (search report)

- [A] EP 0174057 B1 19880824
- [A] EP 0135392 B1 19880203
- [A] EP 0118257 B1 19861217

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EP0839818A1; EP0754696A1; US5935892A; US5306834A; EP0771812A1; US6184413B1

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